



UNITED STATES PATENT AND TRADEMARK OFFICE

cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,767	02/19/2004	Keisuke Wakabayashi	040302-0383	2070

22428 7590 01/10/2008
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

MAPLES, JOHN S

ART UNIT	PAPER NUMBER
----------	--------------

1795

MAIL DATE	DELIVERY MODE
-----------	---------------

01/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/780,767	Applicant(s) WAKABAYASHI, KEISUKE	
	Examiner John S. Maples	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-11 ~~is/are~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claim 3 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5-7, 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuji-JP-09-231990. (Fuji)

Reference is made to the English language abstract to Fuji along with the machine translation of this document. Fuji discloses a circulating supply water system for a fuel cell that includes a pump and ion exchange filters that clean the water therein and which further includes an electric conductivity sensor indicating when the electric conductivity exceeds a certain level, the filters require renewal. It is noted that the claimed predetermined time is when the electric conductivity exceeds such a level; this time having been decided before operation of the fuel cell. Also, "initial electric conductivity" can be when the fuel cell starts operating in the teachings of Fuji, because at this time, the electric conductivity is not at a point where the ion exchange filters require replacement. Finally, it is noted that the term initial does not necessarily mean at the beginning of the flow of fluid; it could mean at any designated start or comparison time while the fluid is being pumped and conductivity is being measured and compared.

In addition, the steps in claims 5-7, 11 and 13 are inherently met by the teachings of Fuji. For example, with regard to claim 5, a steady-state of electric conductivity is not reached because the same is constantly changing. In claim 6, the predetermined time will be shorter when the electric conductivity is smaller, and so forth.

Applicant's arguments have all been considered but are not deemed persuasive. Applicant argues that Fuji does not consider the initial conductivity when setting the predetermined time. The examiner respectfully disagrees. The initial conductivity must be considered in Fuji or there would not be a standard against which to measure the electric conductivity when the said conductivity exceeds a certain value indicating that the ion exchange filters require replacement.

It is noted that applicant further argues that Fuji does not teach or suggest "wherein the predetermined time is set on a basis of an initial electric conductivity of water circulating in the circulating flow path". Again, as set forth in the previous paragraph of this action, Fuji teaches replacing the ion exchange filter when the electric conductivity reaches a certain level and this level is based and compared with an initial electric conductivity.

A further argument by applicant is that Fuji does not teach "a judgment part judging whether replacement of the ion exchange resin filter is needed based on a comparison between a predetermined reference electric conductivity and an electric conductivity of water circulating in the circulating flow path that is measured by the electric conductivity meter a predetermined time after a start of water circulation". Applicant states that the judgment part may determine that the filter does not need

Art Unit: 1795

replacement and that this is not taught by Fuji. This may be true, however, Fuji meets the claimed subject matter for the reasons outlined above and that is all that is required from the applied reference. In any event, because Fuji does determine when the filter needs replaced, it must also inherently judge when it does not need replaced because the electric conductivity has not reached a certain value.

Applicant argues the patentability of claims 2, 5-7, 9-11 based on the same reasons for claim 1 and so the same arguments presented above apply to these claims also.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji in view of Kormann et al.-US 2004/0028963. (Kormann)

The only claimed element not taught by Fuji is the predetermined time being the water circulating in the flow path a predetermined number of times. Kormann teaches in paragraph 5 a predetermined time for changing an ion exchange filter in a fuel cell system after a certain operating time. It would have been obvious to one of ordinary skill in this art to have utilized a predetermined time as a number of flow path trips in the system of Fuji because of the teachings of Kormann that disclose a predetermined time

according to the passage of a certain amount of time. This would provide for a more scheduled replacement of the filter in the system of Fuji.

Applicant's arguments have all been considered but are not deemed persuasive. Applicant argues that there is no reason to combine the above references. This argument is not convincing because it is proper to combine the teachings in the above two references. First of all, both references concern the same field of technology and that is fuel cells with operating fluids in which an ion exchange membrane is located and which filter needs periodic replacement. Secondly, the KSR case, cited by applicant, supports the examiner's position to combine the references. This is because Fiji is using a known technique from Kormann that would improve the system in Fiji.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Maples whose telephone number is 571-272-1287. The examiner can normally be reached on Monday-Friday, 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSM/1-5-2008


JOHN S. MAPLES
PRIMARY EXAMINER